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THE THOMBO TREASURE. COLONIAL POPULATION ADMINISTRATION AS SOURCE FOR THE HISTORICAL DEMOGRAPHY OF EARLY MODERN SRI LANKA

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During their occupation of Sri Lanka (1640–1796) and following Sinhalese and Portuguese practices, the Dutch created an elaborate registration of people, estates, and labour services. The administrative records known as the thombos are incomparable in their level of detail, yet they have hardly been used for the purposes of demographic or economic history. This article describes the challenges involved in ‘decoding’ the thombos, that is, reconstructing the meaning of particular variables in the light of the prevailing legal pluralism in which Sinhalese common law and Roman-Dutch law co-existed uncomfortably. It also summarises research findings from a pilot study involving about two hundred small villages in Colombo province. Finally, it sketches research horizons, as the thombo ‘treasure’ holds great prospects for (comparative) studies into family systems and the impact of colonial rule on fertility and mortality.

Keywords: colonial administration, eighteenth century, historical demography, Sri Lanka, thombos

INTRODUCTION

Historical demography studies the basics of human life in as rich a context as possible. Birth, family formation, and death are universal aspects of life, yet their embedding in social processes differs across societies. Osamu Saito was one of the first to criticise the tendency of many (historical) demographers to lump large regions of the world together and to assume simplistic differences between the ‘west’ and the ‘rest’. Moreover, the effects of economic (‘market’) factors on

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demography tend to be overestimated due to an Eurocentric bias. In his influential 1996 article, Saito argued that the Japanese stem family posed a specific set of norms and constraints on demographic behaviour (Saito, 1996; also Saito, 1998, 2000). Indeed, eastern and southern Asian regions cannot be grouped together under the simplistic label of joint family systems. We need to identify economic, cultural, and ecological causes of regional diversity in order to understand past and present demographic processes. Saito (1996) also points at the crucial importance of (market and non-market) institutions on demography, and he mentions as example the organisation of poor relief.

In this article, I aim to follow in Saito's footsteps by describing the interplay between colonial administrative and extractive institutions and population processes in a South Asian population, the Sinhalese of early modern Sri Lanka. I will concentrate on the archival sources, as they need careful examination before they can be employed in demographic analysis. In this respect, as well, I follow Saito's lead. Census, civil records, and population registers are, clearly, never 'objective', factual representations of the people they describe. They are the outcomes of complex interactions and conflicts in which people's perceptions of their identity, their relationships, and religious norms, as well as the government's bureaucratic and fiscal interests and legal definitions of citizens, persons, and families all play a role. Understanding historical population administration, therefore, requires a thorough knowledge of the prevailing family customs, the historical antecedents of a given administration, and the (often contested) interpretation of the variables found in the sources. For this, court cases often yield fascinating insights as Saito and Sato (2012) have shown in their study of the Japanese civil registration.

The next section of this article charts the history of the so-called thombos, the detailed registration of land and people by officials of the Dutch East India Company. A clear example of institutional path-dependency, the Dutch followed and perfected indigenous administrative practices, and in doing so followed the example of the preceding Portuguese colonisers. Their administrative efforts resulted in an astonishing collection of volumes representing a census-*cum*-cadastre of most of the territories under the Company's command. However, we still know very little of the actual process of registration – who provided the information to the registrars and how was this checked? Were persons missing or misrepresented and why? What was the definition or contemporary interpretation of crucial variables such as age and marital status? Although the thombos are undoubtedly among the richest sources for historical demography in Asia, they certainly need to be used with care.

Then, I summarise the first efforts to work with data gleaned from the thombos. So far, socio-economic studies have dealt with colonial extraction and effects on land use, female surmortality and infanticide. Thombos are also being used to study colonial law-making 'on the ground' by showing how elites, intermediaries, and commoners all had their own means and strategies to influence colonial administration and juridical procedures to their own benefits.

Finally, I discuss the plentiful research opportunities for historical demographers and economic historians, as we have just begun to scratch the surface of this source.

THE THOMBO REGISTRATION

The colonial administration of Sri Lanka of the Dutch East India Company (active on the island from 1640–1796) has left an impressive legacy which is preserved in the Sri Lanka National Archive (Colombo). Among others, this legacy consists of large volumes of thombos containing meticulous recordings of families and their estates, their labour duties, and their tax obligations.

The Dutch thombo registration built upon the traditional feudal relations in which the King as ‘Lord of the Land’ (*bhupati*) was compensated for use of ‘his’ land through labour services. Already in ancient times, land use and the accompanying services (*rājakāriya*) were carefully recorded in so-called *lekam miti* (land rolls on palm leaves) (Paranavitana, 2001). The Portuguese, who occupied parts of the island from 1597 to 1658, maintained the feudal institutions and noted land holdings in *tombo* ledgers and tax duties in *forals* (De Silva, 2005; Serrão, 2014; Rupesinghe, 2017). Holdings and duties were recorded for the village lords, who used the services of the tenants for themselves and who paid the village taxes to the Portuguese. These lords were either Sinhalese or Portuguese settlers who received land grants (*accomodessans* or *dível*) to fulfil their tasks (Reimers, 1928, p. 21; Paranavitana, 2001, p. 6). Initially, the Dutch as well relied on the local elites to help them keep their always precarious hold on the island. Their hold was precarious because the interior Kingdom of Kandy remained independent and always resented the colonial presence in the coastal regions. The Dutch, like the Portuguese, were pragmatic and tried to change as little as possible to the existing administrative system. Their first efforts date from 1677 in Jaffna (Northern Sri Lanka) and 1693 in Galle (Southern Sri Lanka). Although some of these earliest thombos listed individual tenants, most kept the Portuguese system of aggregated holdings per village (Reimers, 1928; Kotelawe, 1967, p. 440). All in all, the Dutch were not very successful in setting up the thombo system, which is understandable as the intricate knowledge, energy, and money involved in mapping all land holdings and recording all changes in tenure and accompanying services were staggering. By 1740, however, they were dedicated to begin afresh.

In 1740, Governor Imhoff re-instated the Land Council (*Landraad*), a committee of Dutch officials and native headmen overseeing land registration and settling disputes over land. The work on the new thombos properly began in 1742, but encountered many problems, such as a lack of uniformity in land measurements (Paranavitana, 2001, p. 61). On completion in 1759, a revision was immediately ordered which was completed shortly thereafter in 1761. Another

revision began in 1766, necessitated by the upheaval following the war with Kandy (1760–66). This revision was ready by 1771.

What factors underlie this mid-eighteenth-century administrative zeal? One reason was the Company's resentment of the strong position the local headmen had acquired (Arasaratnam, 1985). The Company's land grants allowed them to extort the villagers, but the elites also increasingly managed to buy lands, which weakened the feudal system of extracting labour. The company tried to regain its control and share of the spoils by inspecting all ownership titles to revert illegally acquired property to company ownership. They tried to limit the sale of inherited service land, because purchased land potentially lost the labour services traditionally attached to them, even though it was stipulated that the service or taxes attached to the plot should also be transferred (Kotelawele, 1995; Bulten *et al.*, 2018, p. 63). All land users and their families were recorded, as well as all their lands and gardens with an indication of how they had come into the family's possession. The Company framed this towards the population as a defence against elite exploitation. However, they had to tread carefully as leading families sometimes incited popular rebellions against the thombo registration.

Another reason for improving the land surveys was the growing pressure on the forests in which the cinnamon trees were growing. In fact, the monopoly on cinnamon was the *raison d'être* for the Dutch presence on the island. The supply of cinnamon (that is, peeled and dried bark from the cinnamon tree) was dwindling as villages encroached on the surrounding forests (Kotelawele, 1967, 1995). The population was growing due to immigration from South India and Kandy and through natural growth as well. By recording how fields were acquired, the Company aimed to curtail the traditional practice of village expansion or the formation of new villages through slash-and-burn (*chena*).

Finally, the Company's meticulousness may be seen as part of eighteenth-century rationalism, which stimulated census-taking and use of statistics in empires across the globe (e.g. De Matos, 2016). This development went hand in hand with an increased importance in legal procedures of written evidence over oral testimonies (Schrikker and Lyna, 2019). The rational, bureaucratic sentiment of the time was nicely expressed by Governor Schreuder (1756–62):

because a fully completed *thombo* is of much importance not only for the humblest man in the country but also in the interests of the inhabitants who are well off. For nothing is so proper and natural to any civilised nation than that its lands and subjects are registered in such a way that no child can be born or a greybeard, however old, can die, without this fact being known (Schreuder, 1946, p. 63)

What makes the thombos so extraordinary is the unprecedented level of detail (Van den Belt *et al.*, 2011). Every plot of land is described in terms of name, surface, number of coconut trees, type of ownership, duties and taxes attached, and so on. But also the individuals living on these land are listed with their full

names, ages, marital status, caste, sometimes occupation, and disabilities. Additional information gives status of persons such as former slaves, illegitimate children, or foster children. Perhaps most remarkable – at least from the point of view of demographers – is the genealogical information that specifies how persons are related to the head. An example is a baby girl named Poentje Ettena, age 1, who is the daughter of Kaoeappoe, age 33, who is himself described as the son of the head's grandfather's brother's foster-daughter. Poentje's family consists of 35 persons in the village Pohonoeroewe in Udugaha *pattu* (sub-district) in the Hapitigam Kōralē (a subprovince of Colombo) all described with the same level of detail, as are all the families in the 1760 thombos. According to some authors, the Dutch needed to reconstruct kin connections as they could not make sense of the Sinhalese way of describing kin (Brohier, 1978, p. 133). Indeed, as the anthropologist Yalman noted: 'All the sisters of the mother are called "mother"; all the husbands of these "mothers" are "fathers." The same is true of the brothers of the father; they are called "father" with prefixes for elder and younger. The wife of a "father" is a "mother." All the children of these "fathers" and "mothers" are "brothers" and "sisters"' (Yalman, 1962, p. 556). However, the thombos' kin details may also have served another function. In the late 1750s, Governor Schreuder aimed to restrict the inheritance of land suitable for cinnamon production to direct heirs (children, grandchildren, or full brothers and sisters). In the absence of such heirs their land would devolve to the Company, but other, more distant, kin could be recompensed. In fact, these and other measures to expropriate land (for which ownership could not be proved or services not rendered) led to a full blown revolt which also brought the Company in war with Kandy. After this war, the land policy was completely revised with people now encouraged to grow cinnamon trees on their lands (Kotelawele, 1995, pp. 432–33).

Who was included in the thombos? The answer is: in principle, everyone, as the commissioners who were sent to the villages to compile the thombos were instructed in 1745 that 'no one, of whatever caste, status or sex they may be, should be omitted' (cited in Bulten *et al.*, 2018, p. 63). Lands and the family groups occupying them were either recorded in the same volumes (as in Galle province) or in separate 'land' and 'head' thombos (in Colombo province). In the latter case, they can be linked through the family's head specified in both. The head did not have, by definition, more rights to the land than the other members of the 'land holding group' (Rupesinghe, 2017, p. 147). Even family members – all entitled to an individual share in the family property – who were living elsewhere were recorded with their place of residence. In that particular residence they were listed again, which confirms that not only people who had claims on local property were recorded. However, we still do not know to what extent completely landless and/or mobile people were also included in the thombos (Van den Belt, 2008, p. 251). Although survival in eighteenth-century Sri Lanka depended heavily on access to land, wage labour as well as landlessness were on the increase (Kotelawele, 1988, p. 88).

The thombos are structured according to the relation to the head, allowing us to see at a glance who were the next of kin and who were more distant relatives. Genealogy takes precedence over household composition, and we cannot be sure that the smaller family units, often separated with blank lines, constitute households. It is very likely that the family groups we encounter in the thombos resemble the traditional ‘compound groups’ described by the eminent ethnographers of mid-twentieth-century interior Sri Lanka (Leach, 1961; Tambiah, 1965; Obeyesekere, 1967; Yalman, 1967). These compound groups consist of relatives living in small houses in nuclear units on ancestral lands. The people living on the family estate all had ‘successfully [asserted] a claim based on pedigree,’ according to Leach (1961, p. 101). According to old Sinhalese customs, ancestral lands or *paravēni* were to be divided among all children, who held individual titles – in other words the land was not held in joint ownership. Of course, this principle entailed the risk of fragmentation of land. To ensure that the *paravēni* remained under control of the agnatic kin group, the following rules were in place. First, a married woman held only temporal rights on her part of the land which devolved to her brothers after her death. But, ideally, she had sent her own son to her natal family to claim her share and marry her brother’s daughter. Also, after divorce or in case her husband died and she could not live from his share, she could return to her family and claim assistance (Obeyesekere, 1967, p. 43). Second, upon marriage inherited shares of husband and wife were not pooled (there was no conjugal fund) and each passed on his or her share to their own children. Third, and related to the second point, widows enjoyed only the usufruct of their husband’s share, which was passed on integrally to his children (Obeyesekere, 1967, p. 42). However, if there were no sons, daughters gained an absolute title to the land which did not revert to their father’s brothers. The individual title to land implied that people could alienate their share, for example, by selling it, but of course this would cause distress in the family as the aim was to preserve and, if possible, to enlarge the *paravēni*. The word ‘share’ instead of ‘plot’ is used here deliberately, as the heirs used a system of yearly plot rotation (*tattumāru*) to ensure an equal division in terms of soil quality. Finally, elderly people could disinherit their children if they felt they did not receive enough assistance.

The thombos very likely present us with entire ‘compound groups’ as well as their detailed kin relationships and their entire economic basis: their rice fields and gardens, their *chena* lands, and the taxes they were due. As the thombos cover large tracts of early modern Sri Lanka, they allow for studying economic and demographic dynamics of entire regions, taking into account ecological constraints, traditional labour service demands, and the effects of tightening Dutch exploitation. But we have to be aware of the fact that many variables found in these registers can be difficult to interpret. For the sake of brevity, I will use as example just two – apparently simple – variables: age and civil status.

Population pyramids based on thombos immediately show strong age heaping (e.g. Drixler and Kok, 2016, p. 98). Another finding is that no one is aged zero.

Perhaps the custom was to simply add 1 year to each age, as occurs in several other societies. But when were babies actually named (and thus recorded in the thombos)? Did the people wait until they were baptised by a Dutch minister on his periodical round to visit his parishes? Or were babies recorded after 7 months when they ate their first rice and received their 'rice name' according to the custom (Paranavitana, 2001, p. 109)? The thombos also report some remarkably old family heads, at least in the interior regions in 1770. Closer inspection using thombos of interior regions linked across (roughly) 1760 and 1770 (see below) reveals the disturbing fact that none of the family heads, and few of the men heading (genealogical) sub-branches had died in the interval, whereas the death rates of the others was staggering. Clearly, the clerks trying to save money for the Company kept the structures of the ledgers intact by keeping the (sub) heads alive on paper. Our impression is that the administration in the coastal regions was more up-to-date. Finally, as I wrote earlier, the first revision of the 'new' thombos was completed by 1761. And although for many villages the second revision was ready by 1768, the clerks simply added 10 years to each age. In other words, if we were to study age-specific mortality we need to remove the 'immortals' and to correct the ages given in the thombos.

'Civil status' is an even more ambiguous category because the Dutch Calvinistic colonisers and Sinhalese held completely opposing views of marriage (Rupesinghe, 2018; 2019). Among the Sinhalese, young men and women were free to entertain amorous relations, and could start living together by setting up a cooking place. Land would be allotted to the couple, but only conditionally as separations were common. The arrangements would become more permanent upon the arrival of children (Tambiah, 1965, p. 156; also Pieris, 1956, pp. 200–1). According to Yalman, the Sinhalese did not even have a word for (formal) marriage (Yalman, 1962, p. 564). It was not important because of the absence of a community of goods, therefore there was no marriage in the sense of '... a powerful, almost indissoluble bond between man and wife, in which their separate properties are united and which clearly defines the heirs to the property as the joint heirs of the couple...' (Yalman, 1967, p. 134). Sometimes, however, elaborate marriage rituals were performed. Yalman (1962) explains the discrepancy between informal and formal marriage from the prescribed degrees of kinship. Sinhalese marriages were endogamous; the ideal was to marry one's cross cousin; thus a girl was supposed to marry a son from a sister of her father (or brother of her mother). And as the customarily expected husband or wife was already close kin, there was no need for a ceremony intended to integrate the spouse in the family group – and this is also why such a ceremony was needed in the case of marriage outside the kin group (Yalman, 1962, p. 565).

In general, marriage was patrilocal, thus upon marriage a woman joined her husband's family group. This marriage type is called *diga*. However, a woman could also stay on the family property and have her husband join her. Often, this was a landless man who held a low status within his new family. He also

gained no rights in the shares of his children. Such *binna* marriages have been seen as an exchange of men between families with too many men (or claims on the estate) and those lacking (adult) men (Obeyesekere, 1967, p. 58; Yalman, 1967, p. 123). Our estimates of marriages in eighteenth-century Colombo province suggest that 5 per cent to 8 per cent were of the *binna* type, but often uxorilocally (*binna*) married daughters lived together with *diga* married brothers (Bulten *et al.*, 2018). Polygamy also occurred among the Sinhalese, especially in the form of fraternal polyandry (Tambiah, 1966). Two or three brothers would share a wife and the children would be assigned to them both and inherit their (in this case joint) shares of the *paravēni*. This custom counteracted the fragmentation inherent in the system of devolution, as the number of children would be limited. Also, the system has been associated with the customary labour services which could take a husband away from his wife and children for months, making it imperative that a second husband takes care of the family (Pieris, 1956, p. 207). In some regions, Dutch officials made mention of polyandric unions, but in most cases we simply encounter many ‘single’ adult men.

The thombo entries give civil status (of women mostly) as ‘married’, ‘wife of ...’ or ‘widow’. But did the officials follow the Dutch Protestant concept of marriage, necessitating a formal ceremony performed by a church minister or magistrate, in the presence of witnesses and preceded by posting the banns? In the Dutch motherland, premarital sexuality was persecuted by the church, and unmarried cohabitation was even a criminal offence. It goes without saying that polygamy was anathema to the Dutch. So whose definition of marriage was followed in the thombos? When we inspect court cases (e.g. Council of Justice in Colombo) it becomes clear that the officials simply followed the local customs. But people were aware that this offered them an opportunity to litigate against relatives whom they felt had usurped land or lucrative positions. By invoking official Dutch laws regarding marriage, they argued that these relatives had been married in the ‘heathen way’, and that their children as illegitimate offspring could not legally inherit land or positions. In the courts of appeal, the Dutch often had no other option than to decide in favour of the litigants. The thombos were then corrected accordingly and people declared ‘illegitimate’ (Rupesinghe, 2016; 2019; Bulten *et al.*, 2018). The thombo registration shows us, basically, the true aim of the Company: making profits by creating as little fuss as possible in extracting labour services. Calvinist moral standards regarding marriage and sexuality took second place, if at all (Bulten *et al.*, 2018, p. 71).

ECONOMIC AND DEMOGRAPHIC EXPLORATIONS

The thombos – that is, the mid-eighteenth-century collection that has been preserved – offer a short but crucial window to observe the impact of colonial exploitation on indigenous land use, internal power relations, and even demographic behaviour. Dewasiri (2008) made a thorough study of the thombos of a

number of villages in Colombo province to analyse changes in the southwestern part of Sri Lanka in the second half of the eighteenth century. His work offers a prime example of the topics that can be addressed on a much larger scale as well. To begin with, the detailed description of plots, fields acquired through slash-and-burn, appendices of villages, and population size and composition allow us to reconstruct the eighteenth-century development of (adjacent) villages in response to immigration and natural growth, but also to government restrictions of expansion into the cinnamon forests. The thombos still have to be linked to the original cadastral maps that have been preserved for several areas. Clearly, there is ample opportunity for a spatial history of the coastal areas of Sri Lanka. Second, the dissertation shows how the fruit gardens, especially coconut trees, played an increasingly important role in the agrarian economy, in the sense that labour was directed towards cash crops and away from the *chenas* and paddy fields. Labour was also drained away from the family economy due to the increasing demands for services by the Company. Furthermore, wage labour was intensified when large plantations emerged. Finally, Dewasari describes how the Company's interventions accelerated the commodification of land; and how class and caste relations were modified. The thombos dutifully recorded who had migrated from the area to the Kingdom of Kandy and Dewasari uses this information to chart the declining sustainability of agriculture and the dispossession of peasants. Regarding caste, the Company had improved the position of the cinnamon-peelers in the caste hierarchy, which would later lead to conflicts when the British abolished the labour services and aimed to restore the 'old' distinctions (also Kotelawe, 1988).

In the second half of the twentieth century, Sri Lanka came to be seen as exemplary for the way the country had reduced female surmortality. The rapid decline in excess mortality led to an interesting discussion on the relative contribution of disease control versus interventions which improved women's societal position, especially education. Some researchers pointed out that the health gains had been especially strong in the fertile age groups, suggesting that the change could at least partly be attributed to a decline in maternal mortality (Nadarajah, 1983). Indeed, maternal mortality was a serious problem in Sri Lanka, with figures as high as 26.8 per thousand life births in 1935 (Langford, 1996). However, the number of maternity clinics was growing rapidly, and Sri Lankan women were remarkably receptive to medical advice. But just as important was the successful fight against hookworm disease (ancylostomiasis). Hookworm is a tropical parasite that lives in human intestines and can cause severe anaemia and iron deficit. Women who already had babies were – because of maternal depletion – more susceptible to re-infection with the disease (Crompton, 2000; Brooker *et al.*, 2008). Severe anaemia increases the risks of maternal mortality. Another contribution was the fight against malaria, both by spraying DDT (dichlorodiphenyltrichlorethane) and by better health care for the infected (Langford and Storey, 1993). Langford and Storey concluded that 'The example of Sri Lanka indicates ... that substantial excess female mortality

can arise in the absence of a “culture against females,” and this must raise the question of whether disease might not also have contributed to excess female mortality elsewhere in the subcontinent’ (Langford and Storey, 1993, p. 277). However, others were not convinced that discrimination did not play a role in the (historical) excess mortality of women. Pieris and Caldwell (1997) argue that, even controlling for the effects of specific diseases, a ‘rest’ excess mortality remains, which could be attributed to higher valuation of sons (as they were to remain on the ancestral lands), who were, for instance, better fed than daughters according to surveys. Valuation of girls was supposedly the lowest among Sri Lankan Muslims. However, Pieris and Caldwell admit that ‘...it is extremely difficult to gain direct objective evidence that there was discrimination, conscious or unconscious, in the past because Sri Lankans nowadays deny that there ever was any difference in treatment’ (Pieris and Caldwell, 1997, p. 182).

Our eighteenth-century thombos, notwithstanding the problems we have described with several categories, can contribute to this debate. In the context of a pilot study, we have entered data on about two hundred villages in Udugaha and Mende *pattuwa* in the interior of Colombo province. A simple population pyramid for 1760 reveals a severe shortage of women. For every 1,000 women aged 0–14 there are 1,347 men, for those aged 15–44 the figure is 1,550 and for those aged 45 and older 1,517 (Kok and Van den Belt, 2013, p. 59). Apart from excess mortality this shortage might be explained by gender-specific outmigration from these regions, but that is not very likely. Another explanation is the over-registration of men, which we found for – at least – 1770 (see above). But the thombos themselves offer us a better approach to mortality differentials (also Van den Belt, 2008, p. 250). For the update which took place between 1766 and 1771, the 1760 thombos were used as draft. Thus, in the 1760 copy, the changes were marked: after the name of persons who had died in the interval the word *dood* (dead) was written. Similarly, out-migration was noted and new persons added with specific marks to denote they were later additions. Thus, we can estimate person years of observation and calculate age-specific mortality rates, leaving out the ‘immortal’ family heads. Overall mortality rates were twice as high as in the first half of the nineteenth century. Probably, the health situation had improved under the British, but we should also be aware that the period under observation coincided with the war between the Dutch and the Kingdom of Kandy, a war that wreaked havoc in the regions of our pilot study (Drixler and Kok, 2016, p. 94). In Figure 1, I show the age-specific ratio of female to male mortality in 1760 (–1770) compared to Sri Lanka as a whole in 1910 and 1945 (downloaded from the Human Life Table Database www.lifetable.de, see also Sarkar, 1951). The figure shows female excess mortality in the fertile age range 15 to 34, possible attributable to maternal mortality, and again between 50 and 59. Perhaps the male excess mortality in the age group 35–49 was caused by the war.

As the thombos contain detailed information on individuals, we can also try to find out which women were particularly vulnerable. A logistic regression (Kok and Van den Belt, 2013, p. 65) on the risk of dying in the interval between

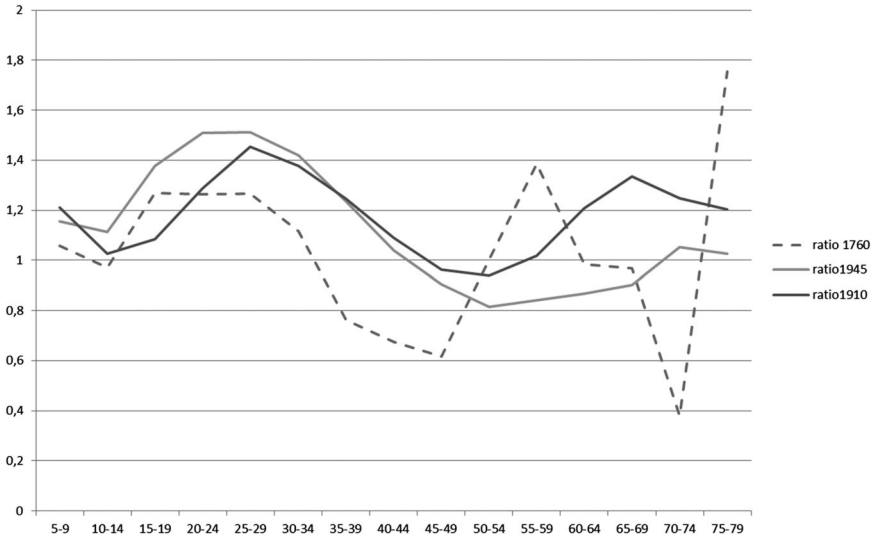


Figure 1. Ratio of female to male mortality in 1760, 1910, and 1945. Source: Head thombos of Udugaha and Mende pattuwa 1760 copies with updates; www.lifetable.de (Ceylon).

1760/1761 and (about) 1768, reveals that women in ‘leading’ families (mentioned first in the thombos) fared no better than other women. Surprisingly, mothers and wives of the family head actually did worse than other women, especially at older ages. Was this related to the heavy burden of caring for several men at the same time? At this point, we can only speculate. Other findings are that women of the Ceylon Moors (Muslims) did significantly better than others. Caste differentials in female mortality were minimal, with higher mortality only found among women in the *Hinnawa* caste, washers who had to perform services for the cinnamon peelers.

Using the thombo information on gender, family relation, and ages, we could also estimate fertility by using a reverse-survival technique known as the Own-Children Method (Drixler and Kok, 2016). In this method, children and mothers from censuses are linked, and life tables are used to estimate the ‘original’ numerator (births) and denominator (women in specific age groups) needed to calculate total fertility rates in the years before the census (normally no more than 15 years assuming children remained with their mothers until that age). The approach has been used for historical periods or countries lacking vital records, for example, Japan in mid-nineteenth century (Kurosu, 2008) and Tibet in mid-twentieth century (Childs, 2004). In applying the Own-Children Method to the thombos, we had to deal with uncertainty regarding the definition of age (see above) and the question what life table would be most appropriate. In the end, we used different combinations providing a range of scenarios. But all scenarios point to the same conclusion: there was a strong regional variation in

total fertility rates (TFR), but they tended to be low to very low. In Mende Pattu TFR estimations for the period 1756–68 range from 4.4 to 5.9 and in Udugaha Pattu from a mere 2.1. to 2.8.

The phenomenon of low fertility in pre-transition societies such as China and Japan has been described by Saito (2006); see also Drixler, 2016). He discusses the effects of prolonged breastfeeding but also family planning through infanticide and abortion and noted that they were not always reactions to poverty. However, he also points at the effects on fertility of bad maternal health caused by heavy female labour in rice-growing populations. Historical Sri Lanka can certainly be added to those ‘low-fertility regimes’. Maternal health was probably affected by malaria and hookworm, as we have just discussed. Although Sinhalese women did not work on the paddies (Yalman, 1967), this should not be mistaken for a limited labour input: apart from heavy work on the *chenas* (slash-and-burn) together with the men, they had many other tasks to perform (Schrijvers, 1983). Our material, however, also points at a strong effect of infanticide on (recorded) fertility. Sex ratios of recorded children depended strongly on the gender of children present. For instance, in Udugaha pattu, we found a sex ratio of no less than 308 (boys to 100 girls) in families with already one or more daughters but no sons. Of course, the infant girls could also have been given away, but the number of (recorded) foster girls is too low to account for these missing girls. The level of (female) infanticide seems to have been lower in nearby Mende pattu. We estimate a total of 27% missing children in Udugaha and 14% in Mende. This confirms Saito’s impression that infanticide could have been a highly localised demographic response (Saito, 1992). In our data, we can detect an intensification of infanticide precisely during the years of the war with Kandy. The Dutch armies punished the inhabitants of the Udugaha and Mende pattus for the rebellion by destroying their crops and gardens (Drixler and Kok, 2016, p. 94). Apparently, many parents resorted to infanticide to cope with this crisis. In the early nineteenth century, Kandyan authorities issues orders against infanticide, which was, according to the British civil servant John D’Oyly, ‘a very common practice after three or four children are born...’ (diary of 1812, cited in Pieris, 1956, p. 206).

In 1949, writing in the context of contemporary concerns about the ‘population problem’ caused by high fertility in developing countries, Taeuber (1949) advocated the study of Sri Lankan demography because the country had such excellent vital records. Ironically, the eighteenth-century thombo records make the country a perfect ‘demographic laboratory’ for the study of *low* fertility as well.

FURTHER RESEARCH PROSPECTS

The thombos, in particular the well-preserved series of 1760 and 1770 which can be combined with other archival sources, offer a rare opportunity for an in-depth study of a south Asian population. But what does the Sinhalese population in the

coastal areas under Dutch rule actually represent? I would like to point at three – interlocking – perspectives or points of departure for further research.

The first, already mentioned above, is the *pre-transitional* nature of the Sinhalese economy and population. Given that the economy was predominantly agrarian and that the towns hardly offered employment opportunities, we can study a ‘homeostatic demographic regime’ in action. Indeed, many villages and regions were so isolated that they pose ‘Malthusian’ constraints on population growth. The land thombos minutely describe the acreage available for rice growing per compound group and per village, as well as the gardens planted with coconut, jack fruit, and areca palm trees. We can calculate man-land ratios, or consumption-production functions per family or per village (Drixler and Kok, 2016). Given ecological constraints as well as the limits posed by the Company on slash-and-burn in some regions, we can begin to understand the trade-off between on the one hand village expansion through forest reclamation and demographic reactions on the other. A reaction to an unfavourable man-land ratio could be uxorilocal marriage (*binna*) thus adding men to the family group. Other options were limiting the growth of the family through infanticide or fraternal polyandry. With regards to the latter, Pieris (1956, p. 207) notes: ‘There is no doubt that the practice of polyandry minimized the fragmentation of ancestral property. For three brothers having four sons by a joint-wife, would certainly have to provide for twelve heirs if each had a separate wife’ (see also Childs, 2003 on this mechanism in Tibet). As shown by Dewasiri (2008), some areas were undergoing transition to a more commercialised economy in which wage labour was becoming important. We can compare the areas more or less integrated in this ‘modernising’ economy to see the full extent of the changes.

The second point of departure is the notion of ‘*family system*’ or the ‘cluster of norms informing family processes’ (Skinner, 1997, p. 54). Family systems capture broad regional variations in norms regarding kin co-residence, inheritance, endogamy, dowries, and so on (Saito, 1998). Family system typologies have proven useful in comparative demographic research, as internal family hierarchies and inheritance rules determine resources allocated to specific individuals and thus individual life chances. An example is the comparative study of mortality in nuclear, stem, and joint family systems in Sweden, Belgium, Italy, China, and Japan by Bengtsson *et al.* (2004). Family systems are perceived as covering large regions (Therborn, 2004) but it can be argued that the Sinhalese had a family system of their own characterised by nuclear households in a kin compound setting (Todd, 2011, p. 208 ff.), informal marriage, bilocal family formation, absence of a conjugal fund, equal inheritance, cross-cousin marriage, and fraternal polyandry (Tambiah, 1965). Studying these different elements in combination and their effects on demographic outcomes can contribute to the international body of knowledge on how culture and demography are intertwined. As we have mentioned above, the thombos were ‘linked’ at the time, making it possible to study mortality, marriage, out-migration, and fertility on an individual level (albeit for a short period), making full use of the detailed information

on the compound group, its genealogy, and its economic resources. Sinhalese families have been described as ‘nuclear’ and ‘individualistic’, yet they were embedded in compound groups consisting of kin. What does this mean for internal mechanisms of competition or support, and how are these mechanisms related to vital events? For instance, grandmothers, according to evolutionary biology hypotheses, form ‘helpers at the nest’ but their effect on infant survival differs across contexts in an as yet unelucidated way (Sear and Coall, 2011). The thombos make it possible to study infant survival by number and type of kin present. Adult survival may differ by type of marriage (*diga*, *binna*, polyandric) and by the resources available on a compound level. Out-migration, for example, of *diga* marrying girls, can be related to the number of brothers and more distant kin (e.g. cousins) available to work the land or liable to fragment the *paravēni*. Likewise, by linking the thombos across villages and comparing the genealogical details, we can study the operation of the dominant cross-cousin marriage norm. How often did girls marry their cross-cousin, how was this related to the geographical dispersal of families, and so on?

Finally, it is vital to recognise the *colonial* context of the population described in the thombos. The colonial setting offers us the complex and challenging prospect of analysing both the effects of colonialism on the *categories* used to study vital events, as well as the effect of colonial institutions on those events. Company officials, ministers of the Dutch Reformed Church, Sinhalese elites, as well as the commoners – all with different interests and different power positions – tried to define the meaning of categories such as marriage, illegitimacy, blood ties, caste, ownership, labour services, and so on (Lyna and Bulten, 2019). The thombos were part and parcel of this multi-layered conflict and in using their categories for our analyses we have to be aware of their constructed and contested nature (Kreager, 2004). Furthermore, Dutch institutions such as the (intensified) labour services had demographic effects. For instance, polyandry has been attributed to the fact that men in specific service castes had to be away from their farms for long periods making it important that a brother took care of wife and children. Colonial exploitation, let alone the colonial wars, may have increased mortality and lowered fertility through infanticide. Finally, the thombo registration as such may have affected (demographic) behaviour. For one, it formalised individual rights to shares in the *paravēni*, stimulating people to be baptised (at least in name, see Paranavitana, 2001), but it may have led to other responses as well. We still need to discover to what extent Christianized people behaved differently from others (e.g. with respect to polyandry). For this, we need to compare the head thombos with parish registers (so-called school thombos) which have also been preserved, although to a lesser extent (Reimers, 1950).

CONCLUSION

The Sri Lanka National Archive in Colombo is home to a unique collection of sources describing land and people of coastal Sri Lanka in the eighteenth

century. Understanding the thombos requires a thorough knowledge of Sri Lankan traditions, of the country's ecology, of the economic and political changes in the eighteenth century, and of the conflicts and negotiations between Sinhalese and Dutch underlying the thombo registration as such (see the Colonialism Inside Out project <https://www.universiteitleiden.nl/en/research/research-projects/humanities/colonialism-inside-out#tab-1>).

The thombos offer a rare insight in a pretransitional and low fertility demographic regime, and allow us to closely link population dynamics to economic resources. Strategies of families to cope with adversity (such as war) or too large or too small family size included infanticide, out-migration, polyandry, cross-cousin marriage, and uxorilocal marriage. The study of these internal processes of demographic decision-making will be a fascinating topic for future demographers. The investment may be large, but the gains will be high as well.

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